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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,391	07/24/2006	Javier Del Prado Pavon	USO40122	1345
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EXAMINER				
ADDY, THUAN KNOWLIN				
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2614				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/597,391

**Applicant(s)**

DEL PRADO PAVON ET AL.

**Examiner**

THJUAN K. ADDY

**Art Unit**

2614

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS-100)
- Paper No(s)/Mail Date 07/24/2006

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.
2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

3. As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if

the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The disclosure is objected to because of the following informalities: The specification does not contain section headings which appear in upper case, without underlining or bold type. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-10, 12, 13, and 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Allen et al. (US Patent Application, Pub. No.: US 2003/0114204 A1).
6. In regards to claim 1, Allen discloses a method for a beaconing protocol for a device to participate in an ad hoc communications network of devices (See Abstract), comprising the steps of: a. dividing the medium access time into a periodic sequence of at least one superframe (102) beginning at a given start time (101) and having a next superframe of the periodic sequence at any point in time (See pg. 3, paragraph [0032]); b. partitioning the superframe (102) into a slotted beaconing period (106) having a plurality of contiguous beacon slots (105) followed by a data transfer period (103) (See pg. 3, paragraph [0030]); c. performing at least one of starting a new ad hoc network by

performing steps (a)-(f), occupying an idle beacon slot of the plurality of contiguous beacon slots, and **sleeping until the start of the next beaconing period and then waking up** and repeating step (c) (See pg. 3, paragraph [0027] – [0028]); d. beaconing an own beacon at said occupied beacon slot; e. receiving data transmissions from the other devices during the data transfer period; f. transferring data to the other devices during the data transfer period (See pg. 2, paragraph [0021] – [0022]).

7. In regards to claim 2, Allen discloses the method, wherein the beaconing step further comprises the step of transmitting a beacon comprising at least one set of information selected from the group consisting of **device identification information and capabilities**, a traffic identification map (TIM), a beacon slot occupancy field, related mesh network, and distributed reservations of the medium (See pg. 2, paragraph [0026]).

8. In regards to claim 3, Allen discloses the method, further comprising the step of: receiving other beacons from other devices during the slotted beaconing period (104) of a superframe (102), said other beacons comprising at least one set of information selected from the group consisting of **device identification information and capabilities**, a traffic identification map (TIM), a beacon slot occupancy field, related mesh network, and distributed reservations of the medium (See pg. 2, paragraph [0026]); and wherein the beaconing step further comprises including in the own beacon information comprising at least one set of information selected from the group consisting of **device identification information and capabilities**, a traffic identification map

(TIM), a beacon slot occupancy field, related mesh network information, and reservations of the medium (See pg. 2, paragraph [0026]).

9. In regards to claim 4, Allen discloses the method, further comprising the step of discovering the other devices, during the time of one superframe (102) once the other beacons have been received (See pg. 3, paragraph [0032]).

10. In regards to claim 5, Allen discloses the method, further comprising the steps of: waking up at the start (101) of the next superframe; if a TIM of any of the received other beacons is addressed to the device, performing the steps of: i. remaining awake during the data transfer period (103) of the superframe (102) if the TIM is not clear, ii. going to sleep during the data transfer period (103) of the superframe (102) when the TIM is clear, and iii. going to sleep if a data frame is received during the data transfer period (103) of the superframe with a "More Data" bit set to zero (See pg. 3, paragraph [0027] – [0028]).

11. In regards to claim 6, Allen discloses the method, further comprising the steps of: receiving information in other beacons regarding the neighborhood of the device; and using the information received regarding the neighborhood of the device to find a transmission path based on a criteria selected from the group consisting of fewest hops and least cost (See pg. 2, paragraph [0022]).

12. In regards to claim 7, Allen discloses the method, further comprising the steps of: from the slot occupancy information in the received beacon, determining for each beacon slot (105) of said plurality of contiguous beacon slots (104) if the beacon slot (105) is one of idle and received incorrectly; if, for a pre-determined number of

consecutive superframes, the beacon slot (105) occupied by the device is determined to be one of idle, received incorrectly, and comprising an information of an other device then a collision is deemed to have occurred in the beacon slot (105) occupied by the device and the device performs step (c) to resolve the collision (See pg. 3, paragraph [0030]).

13. In regards to claim 8, Allen discloses the method, wherein: the transferring step further comprises transferring data during the data transfer period (103) corresponding to a reservation of the medium transmitted in an own beacon; and the beaconing step further comprises retaining the reservation of the medium until the data transfer is completed (See pg. 2, paragraph [0021] – [0022]).

14. In regards to claim 9, Allen discloses the method, wherein the reservation of medium access during the data transfer period (103) of a superframe (102) is based on one of the reservation mechanisms selected from the group consisting of an enhanced distributed channel access (EDCA) mechanism and a distributed reservation mechanism (See pg. 2, paragraph [0021] – [0022]).

15. In regards to claim 10, Allen discloses the method, wherein: the superframe (102) comprises a first pre-determined number of medium access slots (107) having a first pre-determined length; said slotted beaconing period (104) comprises a second pre-determined number of medium access slots such that each medium access slot (107) consists of an identical third pre-determined number of beacon slots (105) followed by a space (203) greater than a fourth pre-determined number; and said data transfer period comprises a remaining number of medium access slots equal to the

difference between the first pre-determined number and the second pre-determined number (See Abstract and pg. 3, paragraph [0030]).

16. In regards to claim 12, Allen discloses an slotted beaconing apparatus for an ad hoc network device (301) (See Abstract) , comprising: a receiver (404) for receiving beacons and data transfers from other ad hoc network devices (301); a transmitter (401) for transmitting own device beacons and data; a slotted beacon processing component (403) that processes received beacons and received data transfers and own beacons and own data transfers for transmission (See pg. 2, paragraph [0026]); a controller (402) operatively coupled to said slotted beacon processing component (403) and configured to divide the medium into a sequence of at least one superframe (102) comprising a slotted beaconing period (104) and a data transfer period (103), to process beacons and data received respectively therein, and format and control own beacons and own data to be transmitted respectively therein (See pg. 3, paragraph [0030]); said receiver (404) and transmitter (401) and configured to respectively control receipt and transmission of beacons thereby during said slotted beaconing period (104) and to respectively control receipt and transmission of data during said data transfer period (103) (See pg. 2, paragraph [0021] – [0022]).

17. In regards to claim 13, Allen discloses the apparatus, wherein: the at least one superframe (102) comprises a first pre-determined number of medium access slots having a first pre-determined length (106); said slotted beaconing period comprises a second pre-determined number of medium access slots such that each medium access slot (107) consists of an identical third pre-determined number of beacon slots (105)



followed by a space (203) greater than a fourth pre-determined number; and said data transfer period (130) comprises a remaining number of medium access slots equal to the difference between the first predetermined number and the second pre-determined number (See Abstract and pg. 3, paragraph [0030]).

18. In regards to claim 15, Allen discloses the apparatus, wherein a beacon comprises at least one set of information selected from the group consisting of **device identification information and capabilities**, a traffic identification map (TIM), a beacon slot occupancy field, related mesh network information, and distributed reservations of the medium (See pg. 2, paragraph [0026]).

19. In regards to claim 16, Allen discloses the apparatus, wherein the controller is further configured to: wakes up at the start of the next superframe (102); if a TIM of any received beacons is addressed to the device: i. remain awake during the data transfer period (103) of the superframe (102) if the TIM is not clear, ii. goes to sleep during the data transfer period (103) of the superframe (102) when the TIM is clear, and iii. goes to sleep if a data frame is received during the data transfer period (103) of the superframe (102) with a "More Data" bit set to zero (See pg. 3, paragraph [0027] – [0028]).

20. In regards to claim 17, Allen discloses the apparatus, wherein other devices are discovered during the time of one superframe (102) once at least one other beacon has been received (See pg. 3, paragraph [0032]).

21. In regards to claim 18, Allen discloses the apparatus, wherein: information is received in other beacons regarding the neighborhood of the device; and the information received regarding the neighborhood of the device is used by the controller

(402) to direct the transmission of data via a path based on a criteria selected from the group consisting of fewest hops and least cost (See pg. 2, paragraph [0022]).

22. In regards to claim 19, Allen discloses the apparatus, wherein the controller (402) is further configured to: determine from the slot occupancy information in the received beacon, which beacon slots (105) are one of idle and received incorrectly; if, for a pre-determined number of consecutive superframes (102), the beacon slot occupied by the device is determined to be one of idle, received incorrectly, and comprises an information of an other device, deem that a collision has occurred in the beacon slot (105) occupied by the device, and direct the slotted beacon processing component (403) to resolve the collision according to a pre-determined collision resolution mechanism (See pg. 3, paragraph [0030]).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claims 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (US Patent Application, Pub. No.: US 2003/0114204 A1).

24. In regards to claims 11 and 14, Allen discloses all of claims 11 and 14 limitations, except the method and apparatus, wherein: said first pre-determined number is 256; said first pre-determined length is 256 usec such that the superframe has a length of 65

msec; said second pre-determined number is 24; said third pre-determined number is 3; and said fourth pre-determined number is equal to the length of a short interframe space (SIFS) (203). Allen, however, does disclose frames and length in regards to time (See pg. 3, paragraph [0030] and pg. 3, paragraph [0032]). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate these limitations within the system, as a way of more specifically defining the length of time of the frame.

### ***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mohan et al. (US Patent Application, Pub. No.: US 2007/0105548 A1) teach an integrated cellular/ PCS-POTS communication system.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to THJUAN K. ADDY whose telephone number is (571)272-7486. The examiner can normally be reached on Mon-Fri 8:30-5:00pm.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (571) 272-7488. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thjuan K. Addy/  
Primary Examiner, Art Unit 2614